

## Series 2200 "OPTYMA-S"

### General

Optyma32-S has been designed in order to complete the Optyma series of valves. Optyma-S, 12.5mm size, integrates all the technical features already developed and implemented on the Optima T & F such as the integrated electrical connection. Further technical specifications are:

- Flow rate: up to 550[Nl/min], using the modular base with Ø8 quick fitting tube.
- Modular base available with Ø4, Ø6, Ø8 quick fitting tube.
- The solenoid pilots are low consumption and fitted on the same side of the valve.
- Mono and bistable valves have the same dimension.
- Easy and fast assembly on the sub base thanks to the "one screw" mounting solution.
- Possibility to replace a valve without the need of disconnecting the pneumatic pipes.
- Electrical and pneumatic connections positioned on the same side.
- Possibility to operate with different pressures and vacuum.
- Management of 32 electrical signals, (16 bi-stable or any combination off mono and bi-stable vales up to max 32 signals).
- The protection grade is IP65 directly integrated in the manifold components.
- The electrical connection is achieved thanks to a 37 pole connector.
- Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET IO RT/IRT, EtherCAT®, Powerlink and Modbus/TCP.

**"Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001, Pneumatic fluid power-Directional control valves-Measurement of shifting time"**

### Main characteristics

One size: 12.5mm thick  
Monostable and bistable valves with same dimensions  
Modular subbase with two positions  
Modular subbases assembled via tie rods  
Quick coupling connections directly integrated in sub base  
Integrated and optimized electrical connection system.  
IP65 protection grade as standard

### Construction characteristics

Body	Technopolymer
Operators	Technopolymer
Spacers	NBR
Spacer	Technopolymer
Spools	AISI 303 stainless steel
Springs	AISI 303 stainless steel
Pistons	Technopolymer
Piston seals	NBR

### Functions

SV 5/2 MONOSTABLE SOLENOID-SPRING  
SV 5/2 MONOSTABLE SOLENOID-DIFFERENTIAL  
SV 5/2 BISTABLE SOLENOID-SOLENOID  
SV 5/3 C.C. SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.C. (=5/3 O.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.O. (=5/3 P.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.O. SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.C. SOLENOID-SOLENOID

### Technical characteristics

Voltage	24VDC ±10% PNP (NPN and AC on request)
Pilot consumption	0,5 Watt
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Life (standard operating conditions)	50000000
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

## Solenoid - Spring

Coding: 2241.52.00.39.✓

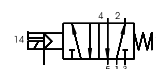
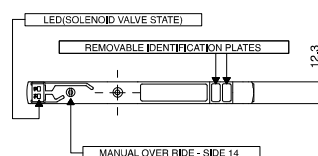
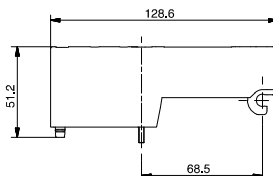
### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	12
Response time according to ISO 12238, deactivation time (ms)	20

Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

VOLTAGE
02 = 24VDC PNP
12 = 24VDC NPN
05 = 24VAC

SHORT FUNCTION CODE "A"  
Weight 67 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4= 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6= 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8= 550

## Solenoid-Differential

Coding: 2241.52.00.36.✓

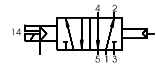
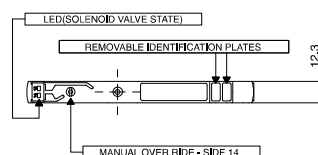
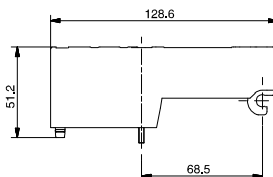
### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	25

Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

VOLTAGE
02 = 24VDC PNP
12 = 24VDC NPN
05 = 24VAC

SHORT FUNCTION CODE "B"  
Weight 67 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4= 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6= 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8= 550

## Solenoid-Solenoid

Coding: 2241.52.00.35.✓

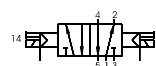
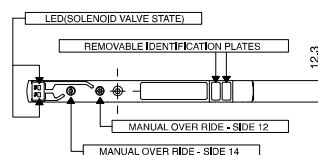
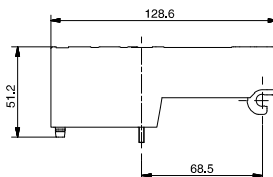
### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	10

Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001


VOLTAGE
02 = 24VDC PNP
12 = 24VDC NPN
05 = 24VAC

SHORT FUNCTION CODE "C"  
Weight 67 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4= 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6= 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8= 550

## Solenoid-Solenoid 5/3 (Closed centres)

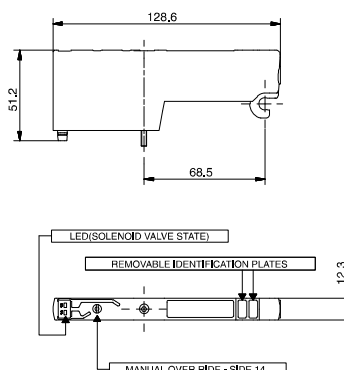
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


Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	400
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

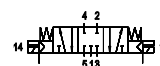
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

VOLTAGE
<b>02</b> = 24 VDC PNP
<b>12</b> = 24 VDC NPN
<b>05</b> = 24 VAC



SHORT FUNCTION CODE "E"  
Weight 83 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.  tube Ø4= 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.  tube Ø6= 300  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.  tubo Ø8= 400



## Solenoid-Solenoid 2x3/2

Coding: 2241.62.  35. 

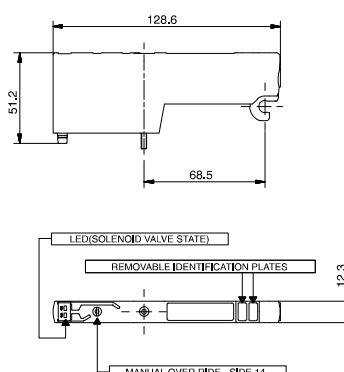
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 3 + (0,2 \times \text{Inlet pressure})$
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	420
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25




Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

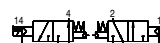
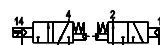
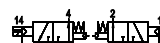
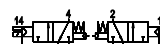
FUNCTION
<b>44</b> = NC-NC (5/3 Open centres)
<b>45</b> = NC-NO (normally closed-normally open)
<b>54</b> = NO-NC (normally open-normally closed)
<b>55</b> = NO-NO (5/3 Pressured centres)

VOLTAGE
<b>02</b> = 24 VDC PNP
<b>12</b> = 24 VDC NPN
<b>05</b> = 24 VAC

SHORT FUNCTION CODE:  
NC-NC (5/3 Open centres) = "F"  
NO-NO (5/3 Pressured centres) = "G"  
NC-NO = "H"  
NO-NC = "I"  
Weight 75 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.  tube Ø4= 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.  tubo Ø6= 360  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.  tubo Ø8= 420



## Left Endplates

Coding: 2240.●.●

### Operational characteristics

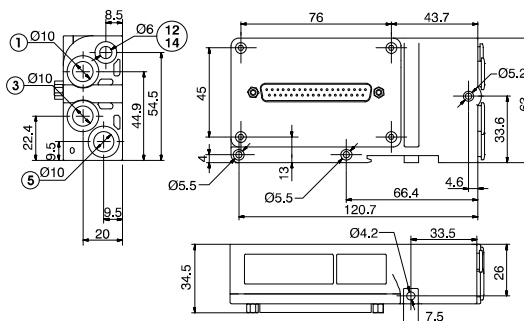
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base) 2,5-7 (Self-feeding base)
Pressure range (bar)	2,5 ÷ 7 (External pilot base)
Temperature °C	-5 ÷ +50

VERSION	
● 02 = External feeding	
12 = Self-feeding	
ELECTRICAL CONNECTION	
37P = Connectors 37 poles PNP	
25P = Connectors 25 poles PNP	
37N = Connectors 37 poles NPN	
● 25N = Connectors 25 poles NPN	
37A = Connectors 37 poles AC	
25A = Connectors 25 poles AC	



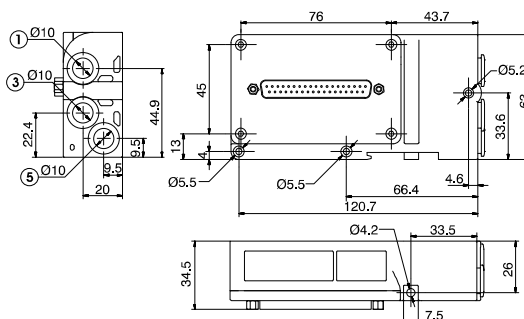
Weight 174 g  
 12/14 separated from port 1

2240.02.●



Weight 174 g  
 12/14 connected to port 1

2240.12.●



## Right Endplates

Coding: 2240.03.●

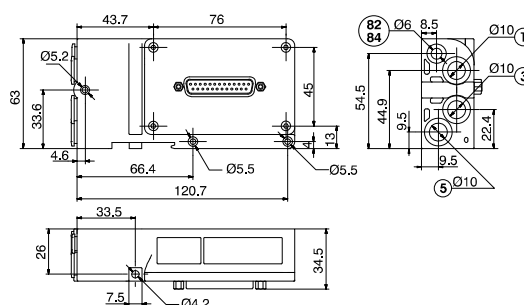
### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50

ELECTRICAL CONNECTION	
● 00 = Electrical connection	
25P = Connectors 25 poles	



Weight 147 g  
 PORT 82/84= DO NOT PRESSURIZE, SOLENOID PILOTS EXHAUST

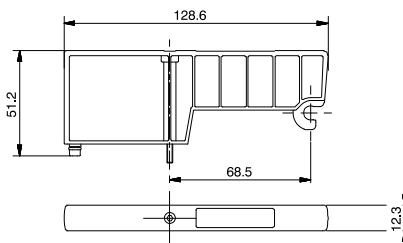


## Closing plate

Coding: 2240.00

### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50

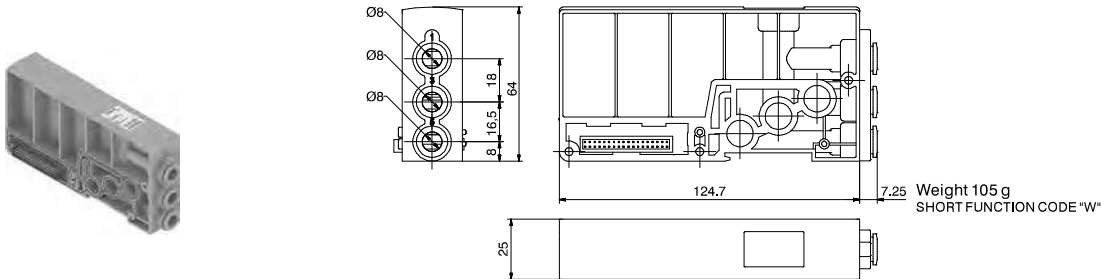


Weight 30 g  
 SHORT FUNCTION CODE "T"

Intermediate Inlet/Exhaust module

Coding: 2240.10

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



Modular base (2 places)

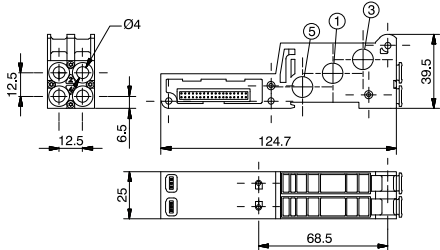
Coding: 224C.F.V

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



2244.C.F.V

Weight 75 g  
SHORT FUNCTION CODE "3" (Monostable) Opened ports  
SHORT FUNCTION CODE "33" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "34" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "35" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "36" (Monostable) Separated ports  
SHORT FUNCTION CODE "37" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "38" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "39" (Monostable) Port 3 separated



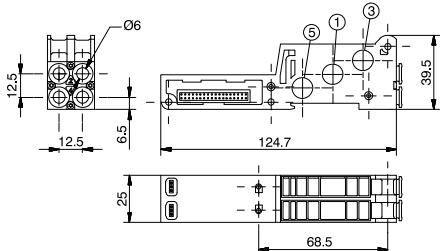
SHORT FUNCTION CODE "4" (Bistable) Opened ports  
SHORT FUNCTION CODE "43" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "44" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "45" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "46" (Bistable) Separated ports  
SHORT FUNCTION CODE "47" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "48" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "49" (Bistable) Port 3 separated

TUBE DIAMETER	
C	4 = Ø4
	6 = Ø6
	8 = Ø8
FUNCTION	
	01 = Opened ports
	03 = Ports 1-5 separated
	04 = Ports 1-3 separated
F	05 = Ports 5 separated
	06 = Separated ports
	07 = Ports 1 separated
	08 = Ports 3-5 separated
	09 = Ports 3 separated
VERSION	
V	M = for Monostable SV
	B = for Bistable SV



2246.C.F.V

Weight 75 g  
SHORT FUNCTION CODE "5" (Monostable) Opened ports  
SHORT FUNCTION CODE "53" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "54" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "55" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "56" (Monostable) Separated ports  
SHORT FUNCTION CODE "57" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "58" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "59" (Monostable) Port 3 separated

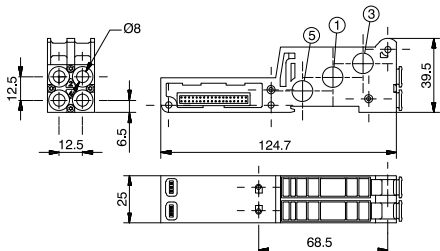


SHORT FUNCTION CODE "6" (Bistable) Opened ports  
SHORT FUNCTION CODE "63" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "64" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "65" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "66" (Bistable) Separated ports  
SHORT FUNCTION CODE "67" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "68" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "69" (Bistable) Port 3 separated



2248.C.F.V

Weight 75 g  
SHORT FUNCTION CODE "7" (Monostable) Opened ports  
SHORT FUNCTION CODE "73" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "74" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "75" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "76" (Monostable) Separated ports  
SHORT FUNCTION CODE "77" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "78" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "79" (Monostable) Port 3 separated



SHORT FUNCTION CODE "8" (Bistable) Opened ports  
SHORT FUNCTION CODE "83" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "84" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "85" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "86" (Bistable) Separated ports  
SHORT FUNCTION CODE "87" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "88" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "89" (Bistable) Port 3 separated

► Polyethylene Silencer Series SPL-R



Coding: SPLR.**D**

	TUBE DIAMETER
<b>D</b>	6 = 6 mm
	10 = 10 mm

► Diaphragm plug



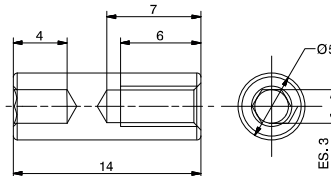
Coding: 2230.17

Weight 6,5 g

► Tie-rod M3

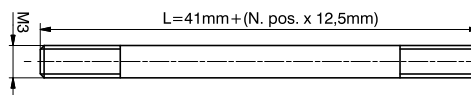


The Kit includes 6 pieces



Coding: 2240.KD.00

► Tie-rod M3



Coding: 2240.KT.**P**

N. POSITIONS
<b>02</b> = Nr. 2 Positions
<b>04</b> = Nr. 4 Positions
<b>06</b> = Nr. 6 Positions
<b>08</b> = Nr. 8 Positions
<b>10</b> = Nr. 10 Positions
<b>12</b> = Nr. 12 Positions
<b>14</b> = Nr. 14 Positions
<b>P 16</b> = Nr. 16 Positions
<b>18</b> = Nr. 18 Positions
<b>20</b> = Nr. 20 Positions
<b>22</b> = Nr. 22 Positions
<b>24</b> = Nr. 24 Positions
<b>26</b> = Nr. 26 Positions
<b>28</b> = Nr. 28 Positions
<b>30</b> = Nr. 30 Positions
<b>32</b> = Nr. 32 Positions

► Cable complete with connector, 25 Poles IP65



Coding: 2300.25.**L.C**

	CABLE LENGTH
<b>L</b>	<b>03</b> = 3 meters
	<b>05</b> = 5 meters
	<b>10</b> = 10 meters
	FUNCTION
<b>F</b>	<b>31</b> = Closed centres
	<b>32</b> = Open centres
	<b>33</b> = Pressured centres

► Cable complete with connector, 37 Poles IP65



Coding: 2400.37.**L.C**

	CABLE LENGTH
<b>L</b>	<b>03</b> = 3 meters
	<b>05</b> = 5 meters
	<b>10</b> = 10 meters
	FUNCTION
<b>F</b>	<b>31</b> = Closed centres
	<b>32</b> = Open centres
	<b>33</b> = Pressured centres

► Cable complete with connector, 25 Poles IP65



Coding: 2400.25.**L.25**

	CABLE LENGTH
<b>L</b>	<b>03</b> = 3 meters
	<b>05</b> = 5 meters
	<b>10</b> = 10 meters



**General :**

Using the 2240.03.25P output terminal it is possible to make any electrical signals not used by valves available on a 25 sub-D female connector at the right end of the manifold.

It is possible to then join a multi-core cable to link to the next manifold, or connect directly to one or two I/O modules.

The I/O modules can accept input or output signals, depending upon what is connected.

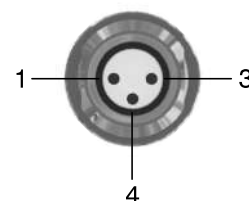
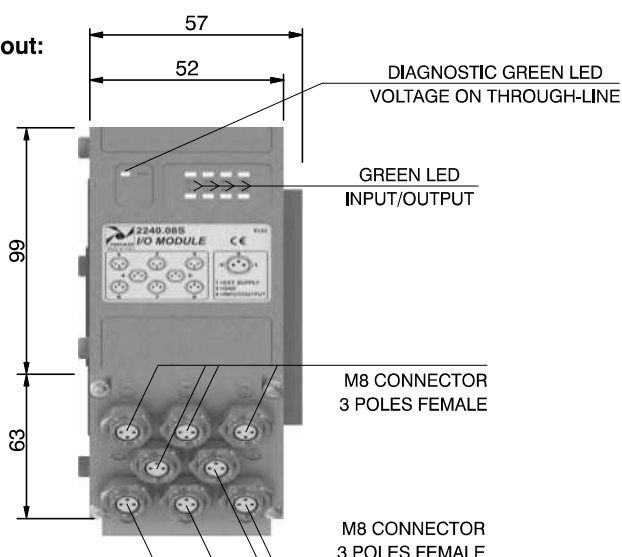
**Ordering code****2240.08S**

**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

It is possible to connect the manifold to up to two I/O modules.

Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

**Overall dimensions and I/O layout:**

PIN	DESCRIPTION
1	+24 VDC
4	INPUT/OUTPUT
3	GND

**Input features:**

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) if +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.

I.E :

Pin 25 of the 25 pin multi-pole connector (code 2240.02.25P or 2240.12.25P)

Pin 36-37 of the 37 pin multi-pole connector (code 2240.02.37P or 2240.12.37P)

**Output features:**

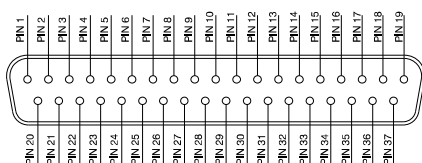
**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

**General characteristics**

Model	2240.08S
Case	Reinforced technopolymer
I/O Connector	M8 connector 3 poles female (IEC 60947-5-2)
PIN 1 voltage (connector used as Input)	by the user
PIN 4 voltage diagnosis	Green Led
Node consumption (Outlets excluded)	7mA per each LED with 24 VDC signal
Outlets voltage	+23,3 VDC (serial) /by the user (multipolar)
Input voltage	Depend by the using
Maximum outlet current	100 mA (serial) / 400 mA (multipolar)
Maximum Input/Output	8 per module
Multiconnector max. Current	100 mA
Connections to manifold	Direct connection to 25 poles connector
Maximum n. of moduls	2
Protection degree	IP65 when assembled
Ambient temperature	from -0° to +50° C

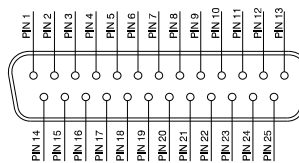
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

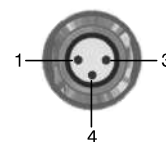


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



1 - 22 = SIGNALS  
23 - 24 = GND  
25 = THROUGH LINE



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

### Connection modes:

The I/O module changes its operation depending on the way the manifold is controlled. There are two possible modes:

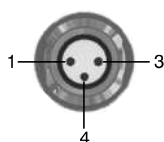
- A) Control via multi-pole connection
- B) Control via fieldbus

#### A) Control via multi-pole :

M8 connector used as Input:



**Attention:** Voltage applied to each connector is passed to multi-pole connector pin.



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

In order to use the I/O module, the correct right hand endplate with 25 pole female outlet connector must be used. (Code 2240.03.25P).



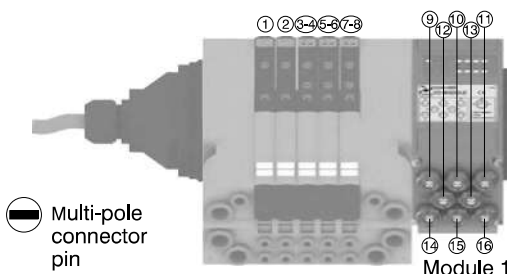
M8 connector used as Output:

Output voltage will be the same as is applied at the multi-pole connector pin.

The maximum output current depends upon the power unit used, but we recommend no more than 250mA.

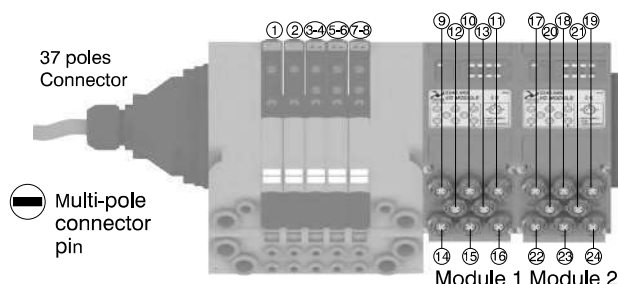


**Attention:** Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



Multi-pole connector pin

**Attention:** Only one more I/O module can be added.

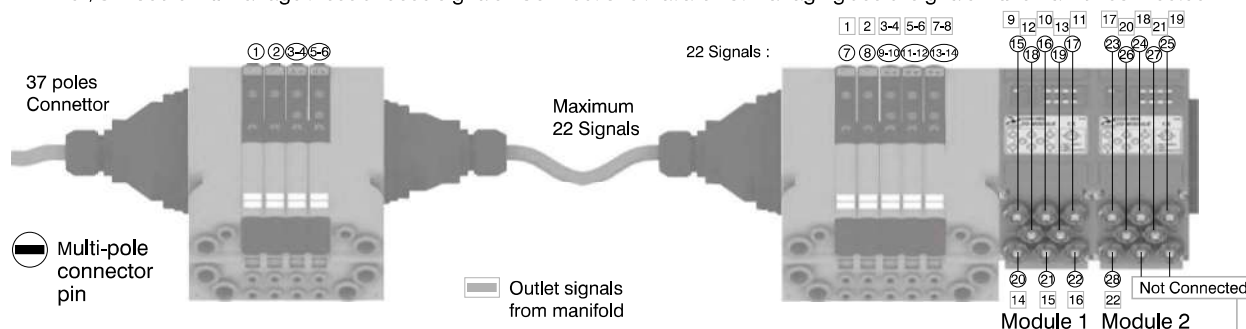


Multi-pole connector pin

**Attention:** No more additions are possible

**Attention :** Optyma 32-S solenoid valve manifolds permit up to 22 electrical signals that are not used by manifolds to be made available: these signals can be managed by another manifold and / or by I/O modules.

The I/O module will manage these unused signals. Connections that are not managing useful signals will remain unconnected.



Outlet signals from manifold

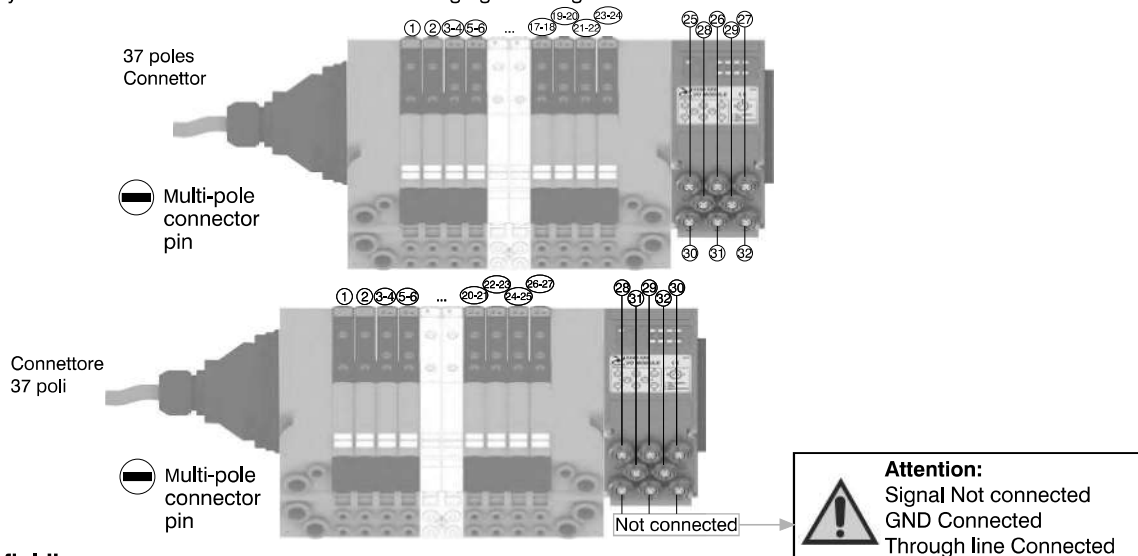
Module 1 Module 2

**Please note:** this example considers a 37 pin multi-pole connector. The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 16

**Attention:** Signal Not connected  
GND Connected  
Through line Connected



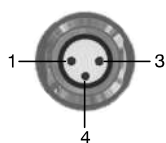
**Please note:** Optyma 32-S solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



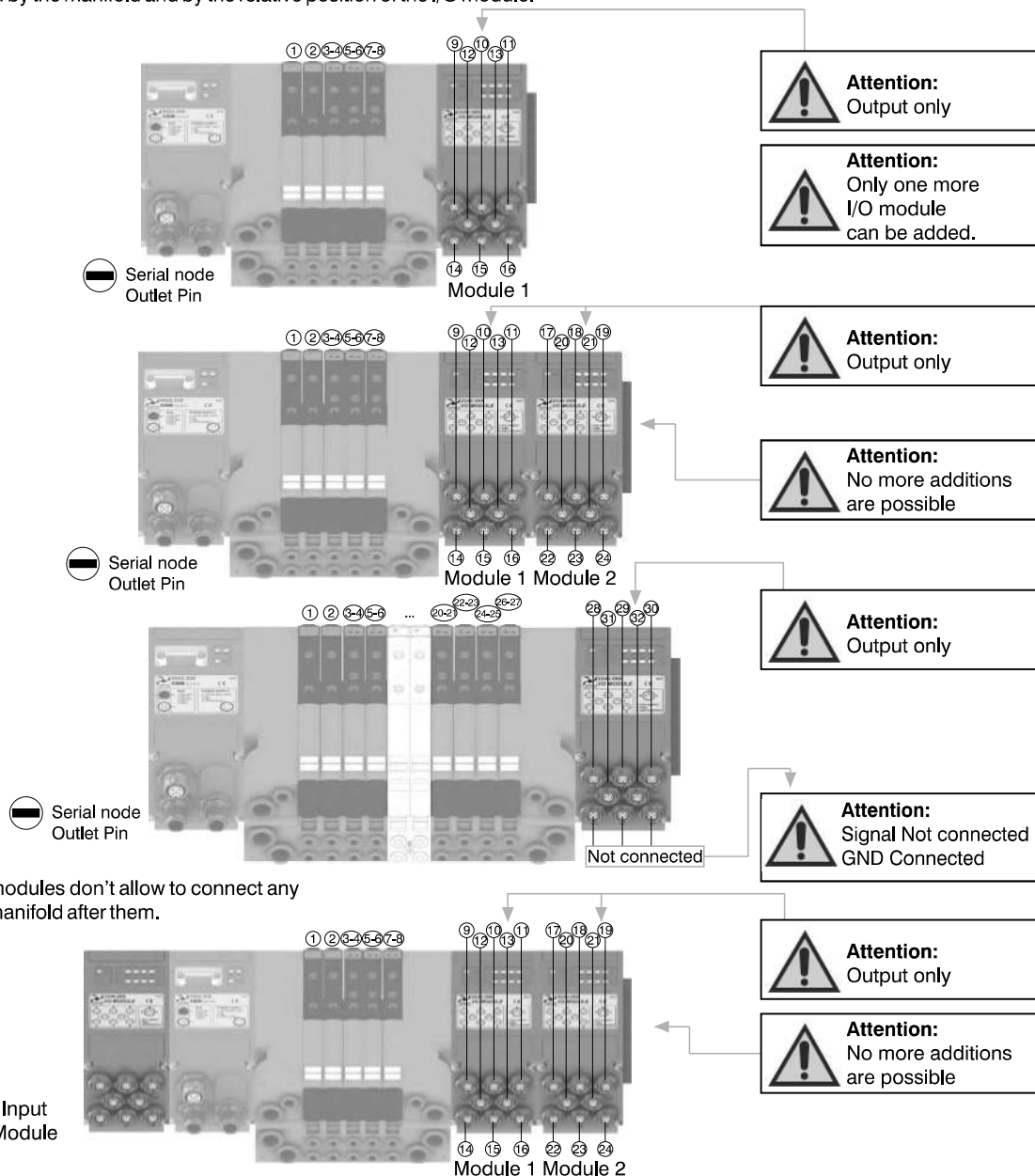
### B) Control via fieldbus:

With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.

The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



PIN	DESCRIPTION
1	NOT CONNECTED
4	SIGNAL
3	GND



**Please note:** I/O modules don't allow to connect any additional valves manifold after them.

## Electrical connection

The electrical connection is made using a 37 pin connector and can manage up to 32 electrical signals. Alternatively a 25 pin connector can be used which is suitable for up to 22 electrical signals. The distributions of the electrical signals between sub-bases achieved thanks to a dedicated electrical connector positioned in each sub-base which diverts the signals needed to operate the solenoid pilots of the valve mounted on the sub-base and passing unused signals forward to the next base.

The Optyma-S sub-bases are designed to carry two valves and are available in the following configurations:

Sub-base configurations	Signals used for the single position	Total number of used signal
Sub-base for 2 bistable valves	2 signals used for the first position	4
	2 signals used for the second position	
Sub-base for 2 monostable valves	1 signal used for the first position	2
	1 signal used for the second position	

### Sub-base for 2 bistable valves

On the sub base for 2 bistable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the first position. Each sub base uses 4 electric signals. The same layout applies to the following position therefore the third signal is used to actuate the solenoid pilot on side 14 of the second position and the fourth signal is used to actuate the solenoid pilot on side 12 of the second position. The remaining signals are transferred downstream.

On a bistable sub base it is possible to mount both bistable or monostable valves (in the second case 1 electrical signal for each valve is wasted). This solutions enables the user to change the manifold layout without the need to re-configure the output correspondence on the PLC. The use of bistable sub-bases reduces the maximum number of valves that can be mounted on the manifold: If the 37 pole connector is used the maximum number of valves is 16 If the 25 pole connector is used the maximum number of valves is 10.

### Sub-base for 2 monostable valves

On the sub base for 2 monostable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the second position. Each sub base uses 2 electric signals. The remaining signals are transferred downstream. On a monostable sub base it is possible to mount only monostable valves (should a bistable valve be mounted on a monostable sub base it will not be possible to actuate the solenoid pilot on side 12). This solutions enables the user to maximise the manifold lay out using all the electrical signals available.

If the 37 pole connector is used the maximum number of valves is 32  
If the 25 pole connector is used the maximum number of valves is 22



**Note:**

Monostable valves, which are fitted with only one solenoid pilot can be mounted on both monostable or bistable sub bases.  
Bistable valves ,5/3; 2x3/2;2x2/2, which are fitted with 2 solenoid pilots and therefore always use two electrical signals must always be mounted on bistable subbases.

### Additional exhaust and air supply modules:

The Additional exhaust and air supply module is fitted with a dedicated electrical connector which does not use any electric signal but simply carries forward all signals which have not been used by the valves mounted before it. This enables its use in any position of the manifold.

## Unused electrical signals

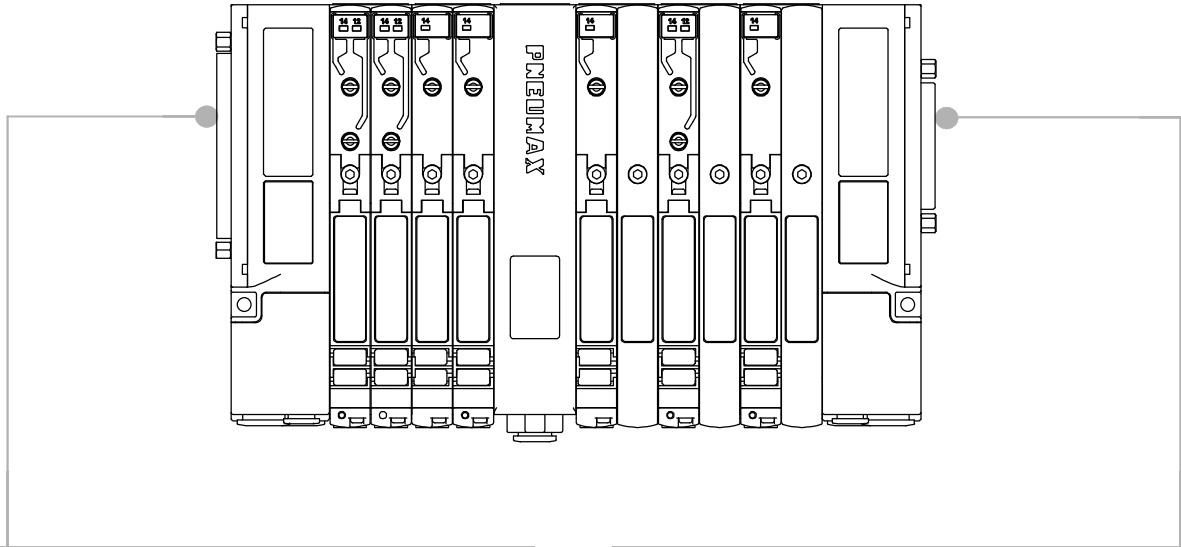
The electrical signals which have not been used in the manifold can be made available by using the end plate fitted with the 25 pole connector.

The number of electric signals available depends on the type of connector mounted on the inlet plate and on the number of signals used in the manifold:

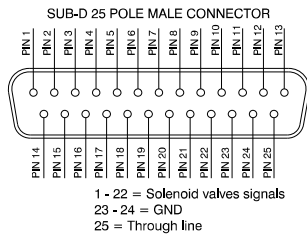
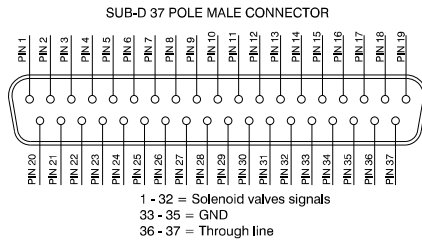
37 pole Inlet connector : N. of outputs= 32 – used signals (max 22)

25 pole Inlet connector : N. of outputs= 22 – used signals

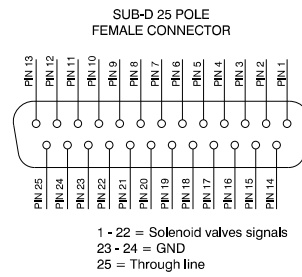
Here are some examples of possible configurations and the corresponding pin layout both on the inlet and end plate :



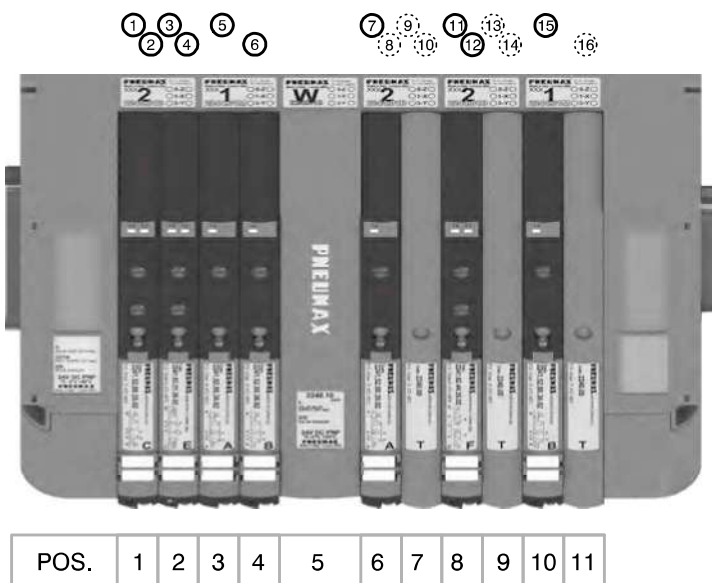
### INLET ELECTRIC CONNECTIONS



### OUTLET ELECTRIC CONNECTIONS (IF PRESENT)

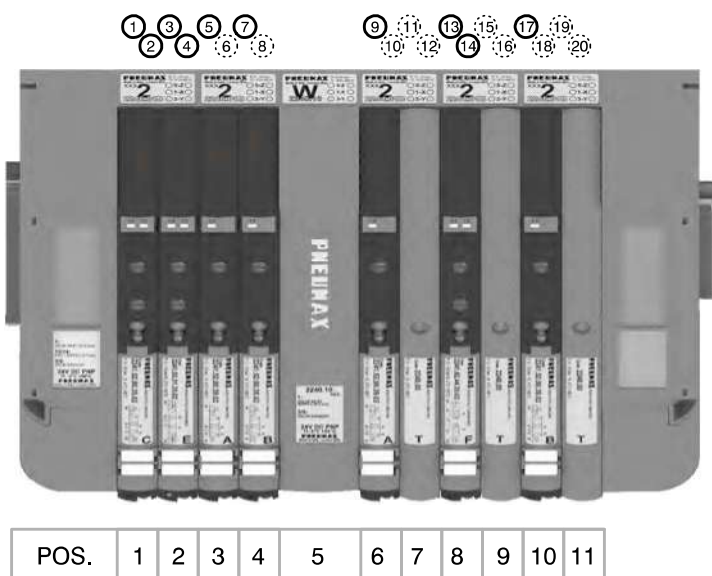


### 37 PIN Connector correspondence for valves assembled on mixed bases



- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 12 SV POS.2
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = PILOT 14 SV POS.4
- PIN 7 = PILOT 14 SV POS.6
- PIN 8 = NOT CONNECTED
- PIN 9 = NOT CONNECTED
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.8
- PIN 12 = PILOT 12 SV POS.8
- PIN 13 = NOT CONNECTED
- PIN 14 = NOT CONNECTED
- PIN 15 = PILOT 14 SV POS.10
- PIN 16 = NOT CONNECTED

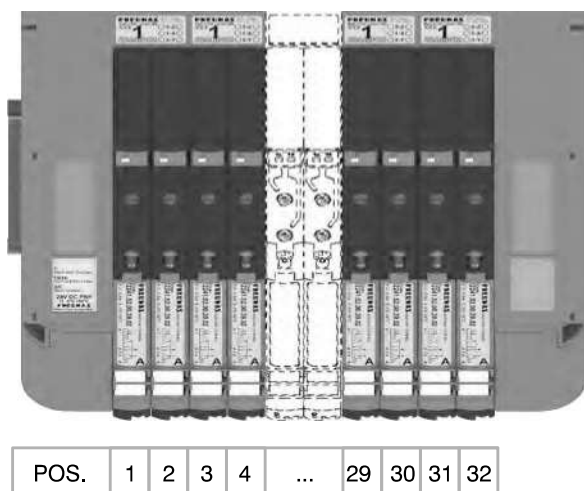
### 37 PIN Connector correspondence for manifold mounted on bases for bistable valves



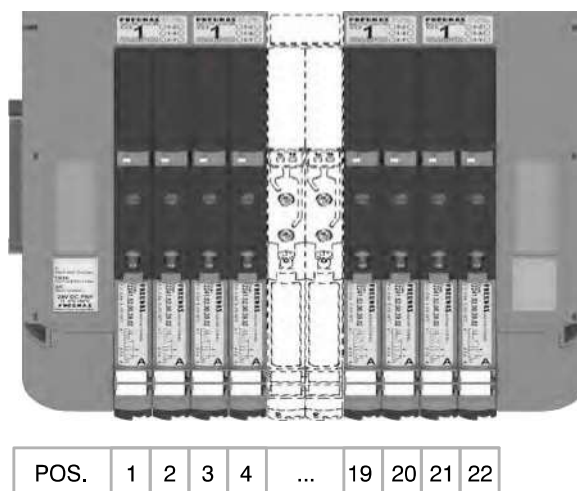
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 12 SV POS.2
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = NOT CONNECTED
- PIN 9 = PILOT 14 SV POS.6
- PIN 10 = NOT CONNECTED
- PIN 11 = NOT CONNECTED
- PIN 12 = NOT CONNECTED
- PIN 13 = PILOT 14 SV POS.8
- PIN 14 = PILOT 12 SV POS.8
- PIN 15 = NOT CONNECTED
- PIN 16 = NOT CONNECTED
- PIN 17 = PILOT 14 SV POS.10
- PIN 18 = NOT CONNECTED
- PIN 19 = NOT CONNECTED
- PIN 20 = NOT CONNECTED

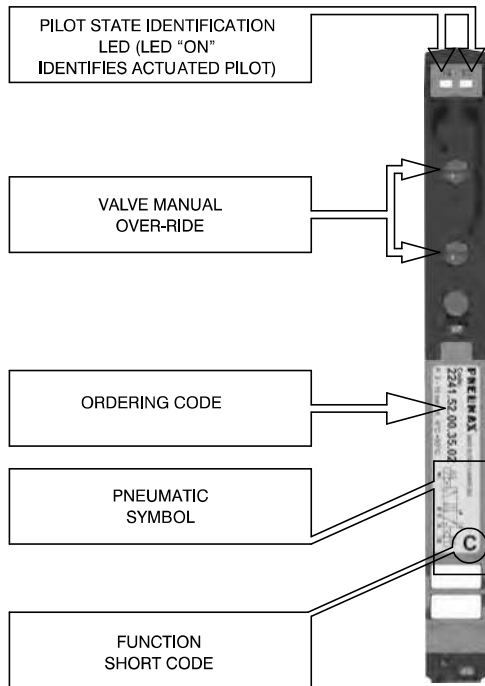
### 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on double bases

37P ① ② ③ ④ ... ②⑨ ③① ③②

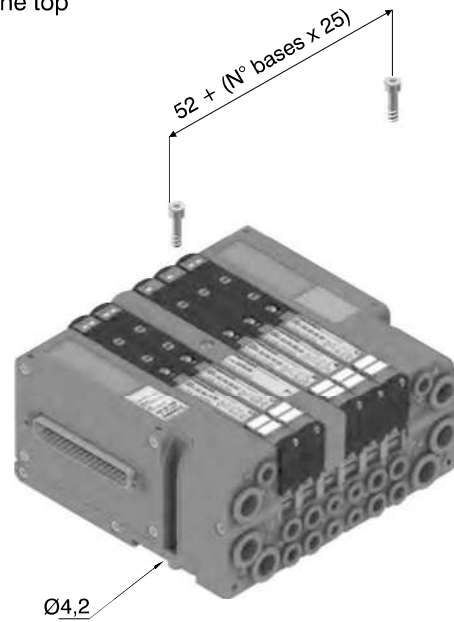


25P ① ② ③ ④ ... ①⑨ ②① ②②



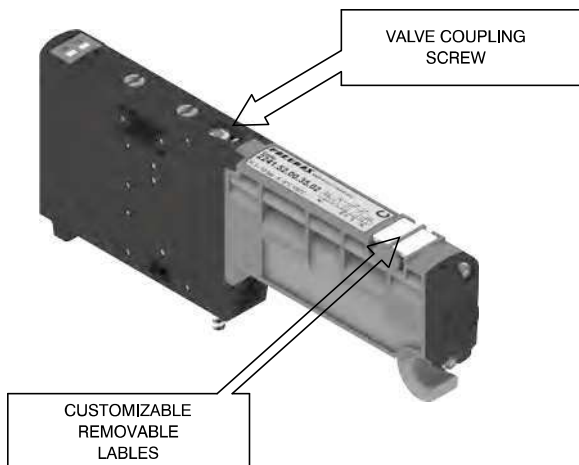


From the top

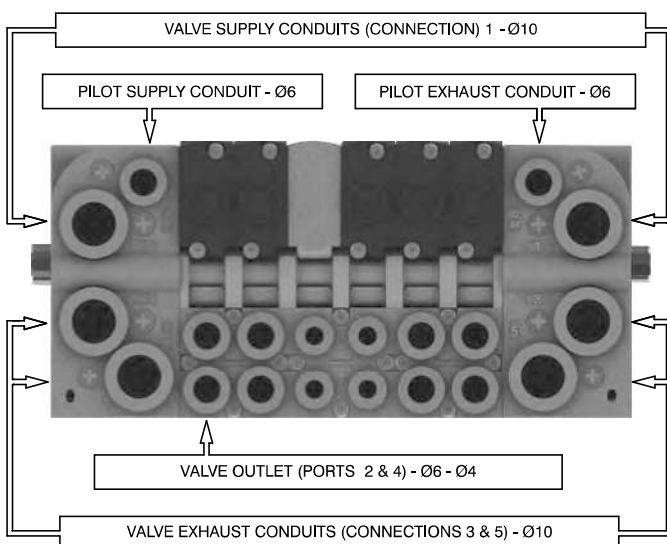
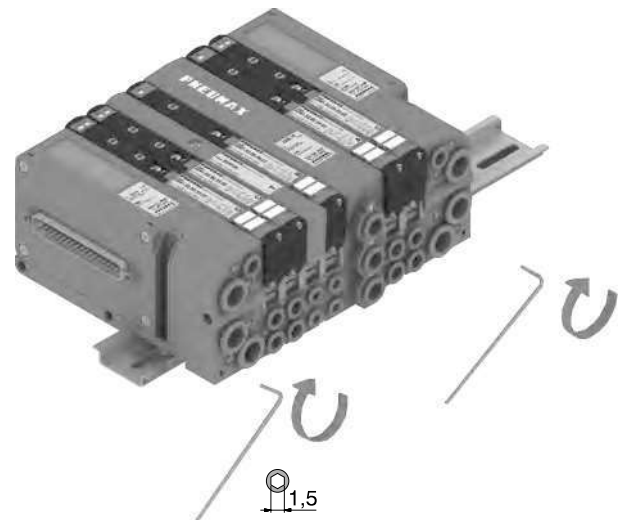


1

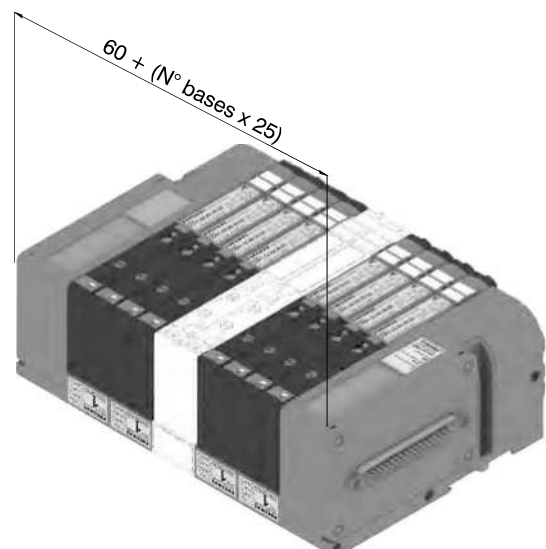
AIR DISTRIBUTION



DIN rail fixing

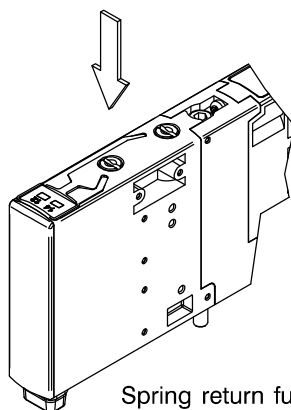
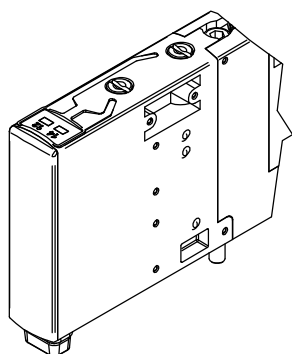


Maximum possible size  
According to valves used

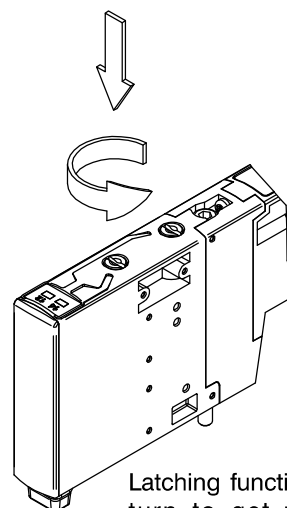




## Manual override actuation



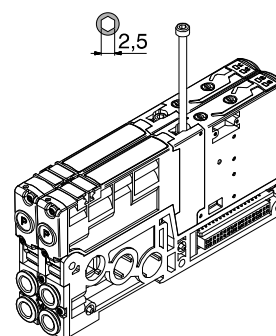
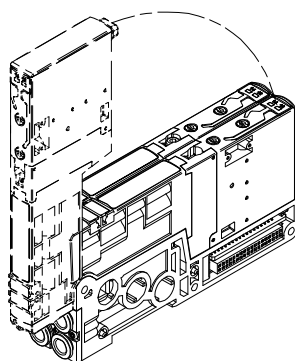
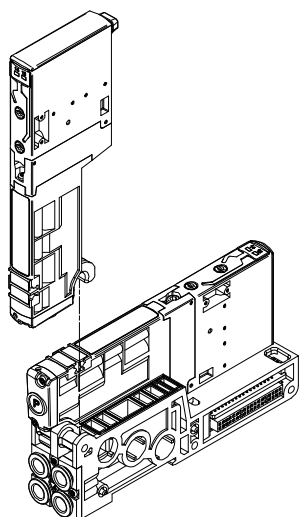
Spring return function: push to actuate (when released it moves back to the original position).



Latching function: push and turn to get the latching function

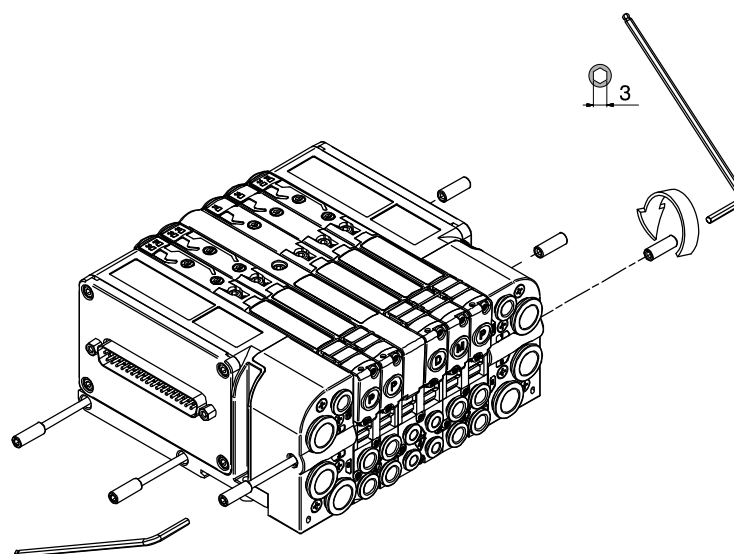
NOTE : It is strongly suggested to replace the original position after using

## Valve Installation



Torque moment (Nm) : 0,8

## Manifold assembly



Min. torque moment : 2 Nm  
Max. torque moment: 2,5 Nm